

ATI Hematology Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

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- 1. What is the primary cause of aplastic anemia?**
 - A. Aplastic anemia is associated with a decreased intake of iron.
 - B. Aplastic anemia results in an inability to absorb vitamin B12.
 - C. Aplastic anemia results from decreased bone marrow production of RBCs.
 - D. Aplastic anemia results in an increased rate of RBC destruction.
- 2. What role do erythropoietin hormones play in the body?**
 - A. They stimulate the production of white blood cells
 - B. They stimulate the production of red blood cells
 - C. They enhance iron absorption
 - D. They regulate blood glucose levels
- 3. What is the primary function of red blood cells (RBCs)?**
 - A. To transport oxygen from the lungs to tissues
 - B. To protect against infections
 - C. To assist in blood clotting
 - D. To carry nutrients to cells
- 4. Which food source should a nurse recommend for a client with a hemoglobin level of 9.8 g/dL?**
 - A. Carrots
 - B. Raisins
 - C. Maple syrup
 - D. Orange juice
- 5. What is a common treatment for severe iron deficiency anemia?**
 - A. Vitamin B12 injections
 - B. Iron supplements
 - C. Corticosteroids
 - D. Blood transfusions
- 6. What laboratory finding indicates ineffective erythropoiesis in anemia?**
 - A. High white blood cell count
 - B. Increased reticulocyte count
 - C. Elevated bilirubin levels
 - D. High platelet levels

- 7. What is the primary source of verification a nurse should use when administering a unit of red blood cells?**
- A. Chart
 - B. Order sheet
 - C. Medication administration record
 - D. Identification wristband
- 8. What is the typical lifespan of a red blood cell?**
- A. Approximately 60 days
 - B. Approximately 90 days
 - C. Approximately 120 days
 - D. Approximately 150 days
- 9. What is aplastic anemia?**
- A. A condition where the bone marrow fails to produce sufficient blood cells
 - B. A genetic disorder leading to iron deficiency
 - C. A type of cancer affecting blood cell production
 - D. A viral infection that destroys blood cells
- 10. What effect does heparin have on blood platelets?**
- A. Stimulates platelet production
 - B. Aggregates platelets
 - C. Causes thrombocytopenia
 - D. Increases platelet counts

Answers

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1. C
2. B
3. A
4. B
5. B
6. C
7. D
8. C
9. A
10. C

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Explanations

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1. What is the primary cause of aplastic anemia?

- A. Aplastic anemia is associated with a decreased intake of iron.
- B. Aplastic anemia results in an inability to absorb vitamin B12.
- C. Aplastic anemia results from decreased bone marrow production of RBCs.**
- D. Aplastic anemia results in an increased rate of RBC destruction.

Aplastic anemia is primarily characterized by the failure of the bone marrow to produce adequate amounts of blood cells, which includes red blood cells (RBCs), white blood cells, and platelets. This condition arises due to damage to the hematopoietic stem cells in the bone marrow, which leads to significantly reduced production of all types of blood cells, resulting in pancytopenia. The primary cause of this decreased bone marrow production can be attributed to several factors, including autoimmune disorders, exposure to chemicals or toxins, certain medications, radiation, and viral infections. In aplastic anemia, the deficiency in blood cell production leads to symptoms such as fatigue, increased risk of infections, and a higher tendency to bleed due to the low levels of red cells, white cells, and platelets. The other answer choices refer to conditions that do not accurately describe the pathophysiology of aplastic anemia. For instance, decreased intake of iron is associated with iron deficiency anemia, while an inability to absorb vitamin B12 is linked to megaloblastic anemia. An increased rate of RBC destruction is related to hemolytic anemia. These options do not pertain to the underlying mechanism of bone marrow failure seen in aplastic anemia.

2. What role do erythropoietin hormones play in the body?

- A. They stimulate the production of white blood cells
- B. They stimulate the production of red blood cells**
- C. They enhance iron absorption
- D. They regulate blood glucose levels

Erythropoietin is a hormone primarily produced by the kidneys in response to low oxygen levels in the blood. Its main role is to stimulate the production of red blood cells in the bone marrow, a process known as erythropoiesis. By promoting the maturation and proliferation of erythroid progenitor cells, erythropoietin helps to increase the red blood cell count, thus improving the oxygen-carrying capacity of the blood. This mechanism is critical in conditions where the body demands increased oxygen delivery, such as during physical exertion or in response to chronic hypoxia. In patients with certain types of anemia or those undergoing treatments such as chemotherapy, erythropoietin levels can be manipulated therapeutically to help manage their red blood cell production. The roles that stimulate the production of white blood cells, enhance iron absorption, and regulate blood glucose levels are influenced by other factors and hormones but are not the primary function of erythropoietin. Thus, the role of erythropoietin is specifically tied to red blood cell production.

3. What is the primary function of red blood cells (RBCs)?

A. To transport oxygen from the lungs to tissues

B. To protect against infections

C. To assist in blood clotting

D. To carry nutrients to cells

The primary function of red blood cells (RBCs), also known as erythrocytes, is to transport oxygen from the lungs to tissues throughout the body. This is achieved through the molecule hemoglobin found within RBCs, which binds to oxygen in the lungs and releases it in the tissues where it is needed for cellular respiration and energy production. The efficient delivery of oxygen via RBCs is crucial for the functioning of organs and overall metabolism, as oxygen is essential for the survival of cells. While RBCs play a vital role in oxygen transport, other blood components serve distinct functions. For instance, white blood cells are responsible for protecting the body against infections, platelets are involved in blood clotting, and plasma carries various nutrients, hormones, and waste products. However, these functions do not relate to the primary role of RBCs. Thus, the correct identification of their main function as oxygen carriers underscores the importance of these cells in maintaining the body's energy and homeostasis.

4. Which food source should a nurse recommend for a client with a hemoglobin level of 9.8 g/dL?

A. Carrots

B. Raisins

C. Maple syrup

D. Orange juice

In this scenario, recommending raisins for a client with a hemoglobin level of 9.8 g/dL is appropriate due to their high iron content. Iron is a crucial mineral for the production of hemoglobin, which is the protein in red blood cells responsible for transporting oxygen. When hemoglobin levels are low, incorporating iron-rich foods can help support the increase of hemoglobin and overall red blood cell production. Raisins are not only a source of iron, but they also provide other beneficial nutrients such as vitamins and antioxidants. This makes them a suitable choice for someone with low hemoglobin. Other options, while providing various nutrients, do not significantly contribute to iron intake. For instance, carrots are excellent for beta-carotene and vitamin A but lack iron. Maple syrup primarily offers sugars and does not contain iron, while orange juice is rich in vitamin C, which can help enhance iron absorption but does not contain iron itself. Thus, recommending raisins aligns best with the need to elevate hemoglobin levels through dietary sources rich in iron.

5. What is a common treatment for severe iron deficiency anemia?

- A. Vitamin B12 injections
- B. Iron supplements**
- C. Corticosteroids
- D. Blood transfusions

Iron supplements are a common treatment for severe iron deficiency anemia because they directly address the underlying deficiency of iron in the body. When an individual is diagnosed with iron deficiency anemia, it means that there is an insufficient amount of iron available to produce hemoglobin, the protein in red blood cells that carries oxygen. Iron supplements provide the necessary iron to help restore normal hemoglobin levels and improve the production of red blood cells. Oral iron supplements, such as ferrous sulfate, are typically the first line of treatment. They aim to replenish iron stores and are effective for most patients. In cases where the patient cannot tolerate oral iron or has severe anemia that requires rapid correction, intravenous iron may be administered. Addressing iron deficiency anemia with iron supplements is essential to alleviate symptoms such as fatigue, weakness, and pallor, and to prevent complications associated with insufficient oxygen delivery to organs and tissues.

6. What laboratory finding indicates ineffective erythropoiesis in anemia?

- A. High white blood cell count
- B. Increased reticulocyte count
- C. Elevated bilirubin levels**
- D. High platelet levels

Ineffective erythropoiesis refers to the production of red blood cells (RBCs) that are either not functioning properly or are dying prematurely. In this context, elevated bilirubin levels are indicative of ineffective erythropoiesis because they occur when there is an increased breakdown of hemoglobin from the dying red blood cells. When erythropoiesis is ineffective, the marrow attempts to compensate by producing more cells; however, these cells often have defects, leading to their destruction. This process releases hemoglobin, which is then metabolized to bilirubin, resulting in elevated bilirubin levels in the blood. Assessing laboratory findings such as elevated bilirubin levels can help distinguish the type of anemia and indicate the underlying pathology. In conditions like hemolytic anemias, for instance, ineffective erythropoiesis is often accompanied by increased destruction of red cells leading to higher bilirubin levels. Thus, the presence of elevated bilirubin effectively signifies ongoing destruction rather than successful and functional erythropoiesis. The other findings, such as a high white blood cell count, increased reticulocyte count, or high platelet levels, do not provide a clear indication of ineffective erythropoiesis in the same way that elevated bilir

7. What is the primary source of verification a nurse should use when administering a unit of red blood cells?

- A. Chart
- B. Order sheet
- C. Medication administration record
- D. Identification wristband**

The primary source of verification a nurse should use when administering a unit of red blood cells is the identification wristband. This is crucial because ensuring the correct patient receives the blood transfusion is of utmost importance in preventing serious complications, such as hemolytic reactions, which can occur if the wrong blood type is given to a patient. Verification using the identification wristband involves checking the patient's name, medical record number, and date of birth against the blood product label and the transfusion order. This step ensures that the blood being administered matches the patient's blood type and identity. While the chart, order sheet, and medication administration record contain valuable information about the ordered blood product and patient history, they do not provide real-time verification of the patient's identity at the moment of transfusion. Therefore, relying on the identification wristband is essential to uphold safety standards and avoid errors during the transfusion process.

8. What is the typical lifespan of a red blood cell?

- A. Approximately 60 days
- B. Approximately 90 days
- C. Approximately 120 days**
- D. Approximately 150 days

The typical lifespan of a red blood cell (RBC) is approximately 120 days. This duration reflects the time it takes for RBCs, produced in the bone marrow, to circulate through the body, delivering oxygen to tissues and organs before they are cleared from circulation. The lifespan is a critical factor in understanding various aspects of hematology, including the body's ability to adequately supply oxygen, the production and destruction of blood cells, and the treatment of disorders such as anemia. After about 120 days, RBCs undergo senescence and are usually removed by macrophages in the spleen and liver. This lifespan allows the body to maintain a steady state of red blood cell production and degradation, ensuring that there are enough healthy cells to meet physiological demands while removing those that are aged or damaged.

9. What is aplastic anemia?

- A. A condition where the bone marrow fails to produce sufficient blood cells**
- B. A genetic disorder leading to iron deficiency
- C. A type of cancer affecting blood cell production
- D. A viral infection that destroys blood cells

Aplastic anemia is characterized by the failure of the bone marrow to produce an adequate number of blood cells. This condition can lead to a significant reduction in red blood cells, white blood cells, and platelets, resulting in symptoms such as fatigue, increased risk of infections, and problems with blood clotting. The primary issue in aplastic anemia is the bone marrow's inability to generate these essential blood components, which can stem from a variety of causes including autoimmune disorders, exposure to certain chemicals or drugs, and infections. The other choices address different medical issues: one refers to a genetic disorder associated with iron deficiency, while another describes a type of cancer related to blood cell production but not specifically related to bone marrow failure in the same way as aplastic anemia. The remaining option involves a viral infection impacting blood cells, which is not the defining feature of aplastic anemia. Thus, the correct choice accurately encapsulates the essence of the condition, highlighting the crucial role of bone marrow in maintaining blood cell production.

10. What effect does heparin have on blood platelets?

- A. Stimulates platelet production
- B. Aggregates platelets
- C. Causes thrombocytopenia**
- D. Increases platelet counts

Heparin has a well-documented effect of causing thrombocytopenia, particularly through a mechanism known as heparin-induced thrombocytopenia (HIT). This condition can occur when the body produces antibodies against complexes formed between heparin and platelet factor 4, leading to a reduction in the overall number of platelets. In this context, thrombocytopenia indicates a drop in the platelet count, which may result from increased platelet consumption or destruction. Heparin does not stimulate platelet production, aggregate platelets, or increase platelet counts. Instead, it primarily acts as an anticoagulant by inhibiting certain factors in the coagulation cascade. Recognizing that heparin can paradoxically lead to a decrease in platelet levels is critical for understanding its effects in clinical settings, especially for monitoring patients receiving heparin therapy.

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Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

<https://atihematology.examzify.com>

We wish you the very best on your exam journey. You've got this!

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